A Partnership in Building Resilience: NIDIS and RISAs

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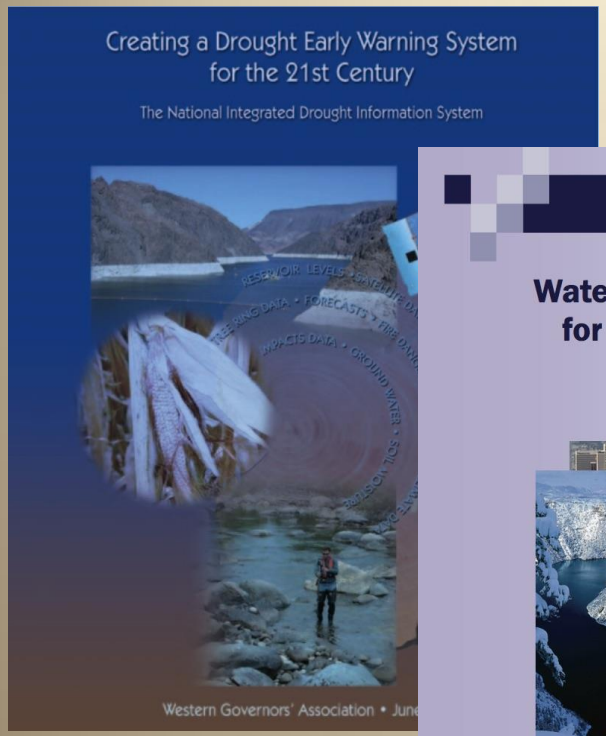
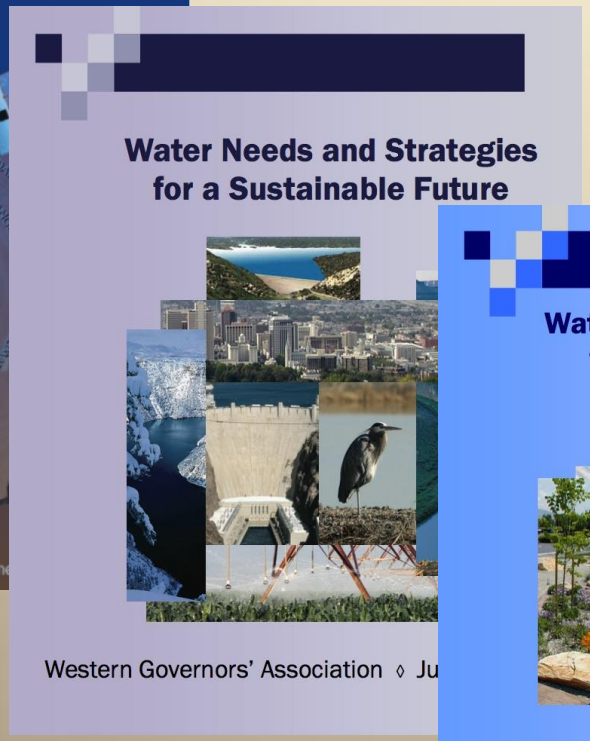
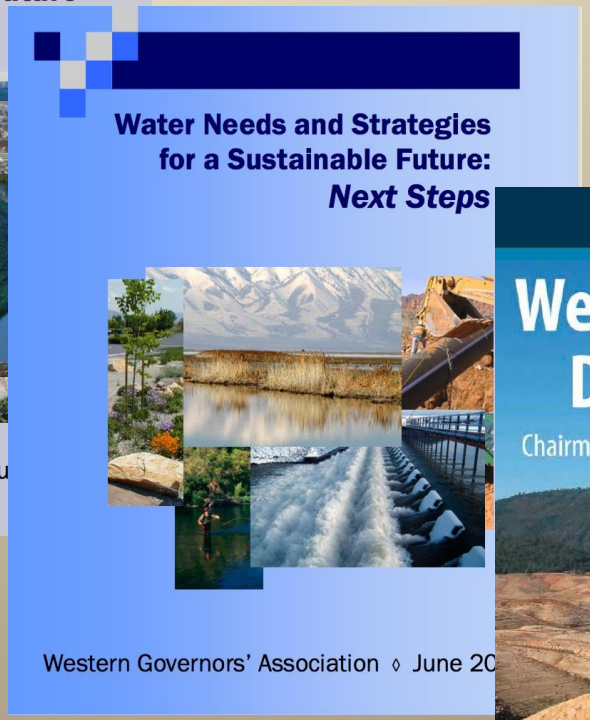
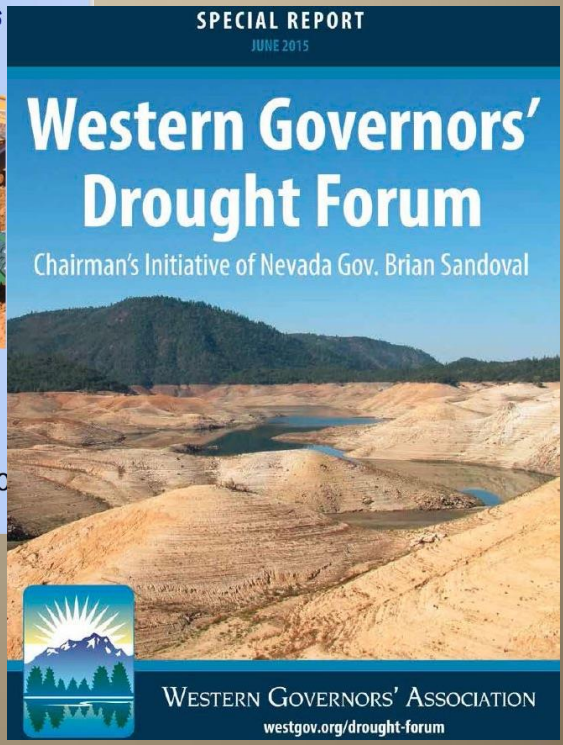
The creation of NIDIS began with a partnership









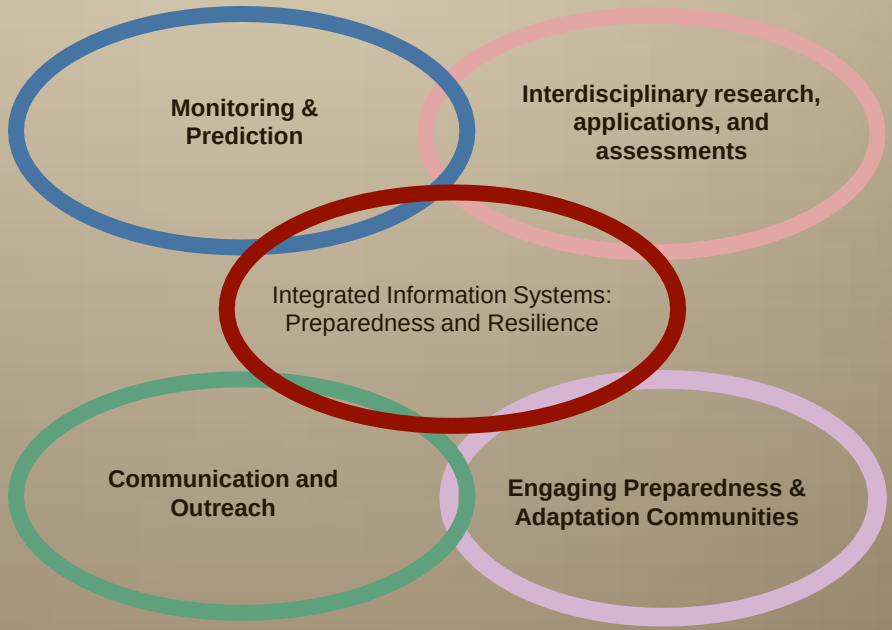
NIDIS 2014: Public Law 113-86

"Today, I signed the National Integrated Drought Information System Reauthorization Act into law.....*to help communities better prepare for droughts…, and prevent the worst impacts on families and businesses"*

March 6, 2014. President Obama

"develop and expand the Regional Drought Early Warning Information Systems"

May, 2014



NIDIS is congressionally authorized and mandated (Public Laws 109-430 and 113-86) to:

1. Provide an effective drought early warning system that:

(A) collects and integrates information on the key indicators of drought and drought impacts in order to make usable, reliable, and timely forecasts of drought, including assessments of the severity of drought conditions and impacts; and

(B) provides such information, forecasts, and assessments on both national and regional levels

NIDIS Public Laws

2. communicates drought forecasts, drought conditions, and drought impacts on an ongoing basis to decision-makers at the Federal, regional, State, tribal, and local levels of government; and the private sector

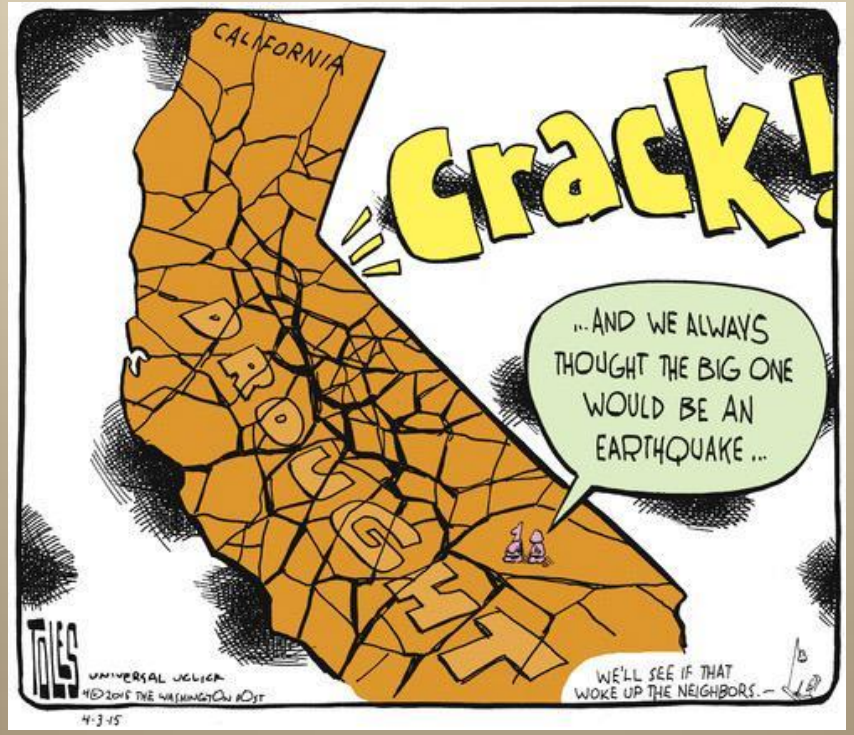
3. engenders better informed and more timely decisions thereby leading to reduced impacts and costs

4. includes timely (where possible real-time) data, information, and products that reflect local, regional, and State differences in drought conditions and

5. continues research activities relating to length, severity, and impacts of drought and the role of extreme weather events and climate variability in drought.

What *really* is Drought Early Warning?

Provision of timely and effective information, through identified institutions, that allows individuals exposed to a hazard to take action to avoid or reduce their risk and prepare for effective response[1]



[1]International Strategy for Disaster Reduction

What is a NIDIS Drought Early Warning System?

A DEWS utilizes new and existing partner networks to optimize the expertise of a wide range of federal, tribal, state, local and academic partners in order to make climate and drought science and impact data readily available, easily understandable and usable for decision makers; and to improve the capacity of stakeholders and economic sectors to better monitor, forecast, plan for and cope with the impacts of drought at all spatial and time scales.

NIDIS Goals

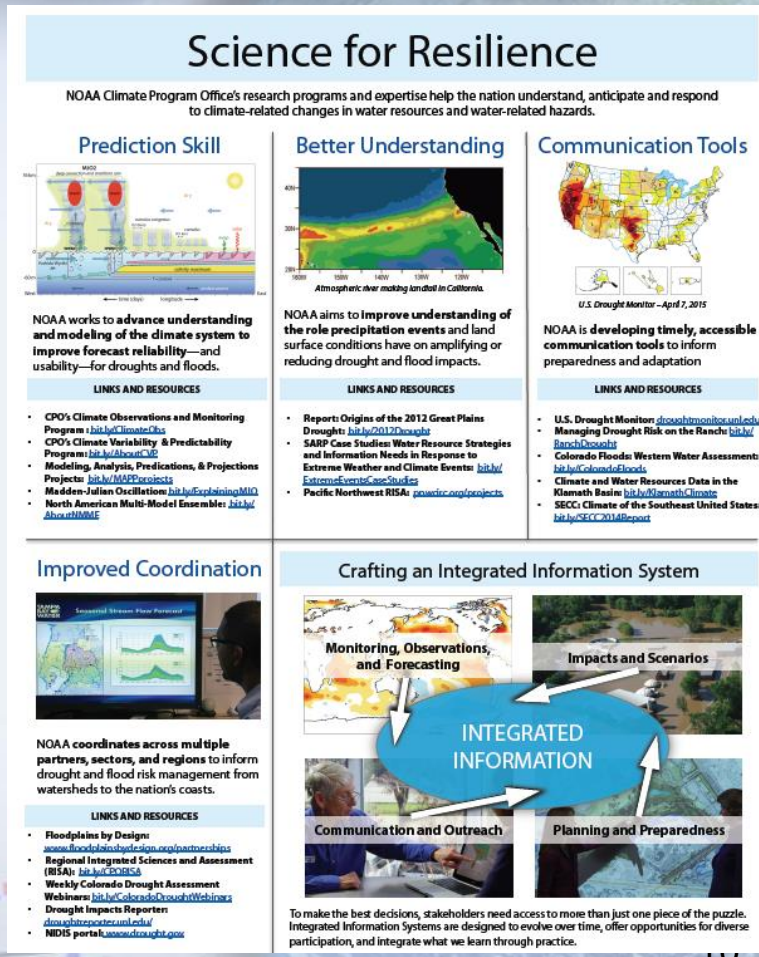
Drought information, research, education, policy and networking come together through the National Integrated Drought Information System.

- Leadership and networking among all sectors of the economy and services to monitor, forecast, plan for and cope with the impacts of drought
- Support for research on the science of drought, including indicators, impacts, risk assessment and resilience
- Creation of regional early warning systems for drought
- Developing educational resources, interactive systems, and tools to promote sound decision making, drought awareness, and response

NIDIS 2.0

From Risk to Resilience:
Research-based Integrated Information Systems

- Develop and coordinate partnerships: networks of practitioners public-private: map decision-making arrangements
- Advance earth system observations and prediction capabilities
  - Construct risk profiles: the role of rates of change in trends, frequency, and magnitude of extremes at different scales
- Capacity and Coordination: Integrate Research, Observations, and Assessments into early warning information on critical transitions and capacity for response
- **Overcoming impediments**
  - **Do this for a long time**

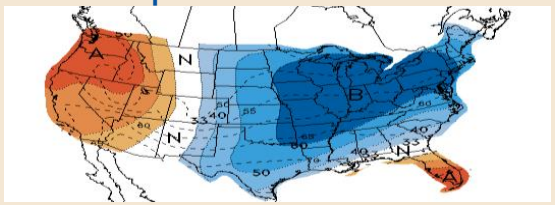


Define Demand

NOAA sustains engagement between climate and public health communities to **identify needs, develop solutions, and inform decisions**.

- **RISA and Heat Health**
  - **In New York City:** www.CCRUN.org
  - **In North Carolina:** www.CISA.SC.edu
  - **In Arizona:** www.CLIMAS.arizona.edu
- **CDC Climate and Health Program:** www.CDC.gov/climateandhealth

Improve Forecasts



NOAA works to **improve current heat forecasts** based on user need and to extend heat projections from weeks to months and beyond.

- **Climate Variability & Predictability Program (CVP):** bit.ly/AboutCVP
- **Modeling, Analysis, Predictions, & Projections Program (MAPP):** bit.ly/MAPPprojects
- **Madden-Julian Oscillation:** bit.ly/MJOandTemp
- **Climate Prediction Center Temperature Outlooks:** www.CPC.NCEP.NOAA.gov

Observe & Monitor

NOAA works to sustain observations that support **improved understanding of the role of climate on extreme heat** and enhance operational efforts.

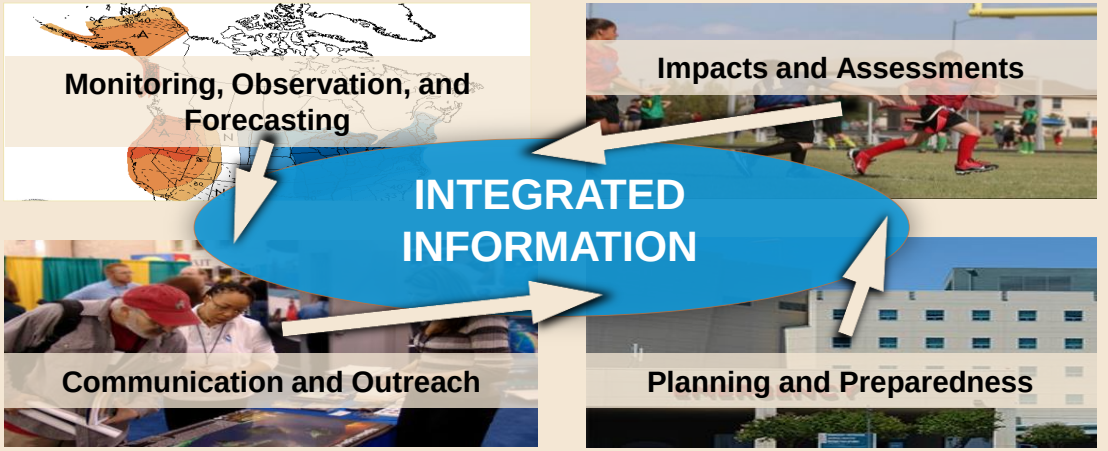
- **Climate Observations and Monitoring (COM):** bit.ly/ClimateObs
- **CDC National Environmental Public Health Tracking Program:** bit.ly/CDC-NEHTP

Understand & Communicate

NOAA research **enhances understanding** and impact of extreme heat events across time scales, **builds capacity** across climate and public health communities, and develops timely and accessible communication tools **to inform preparedness and adaptation**.

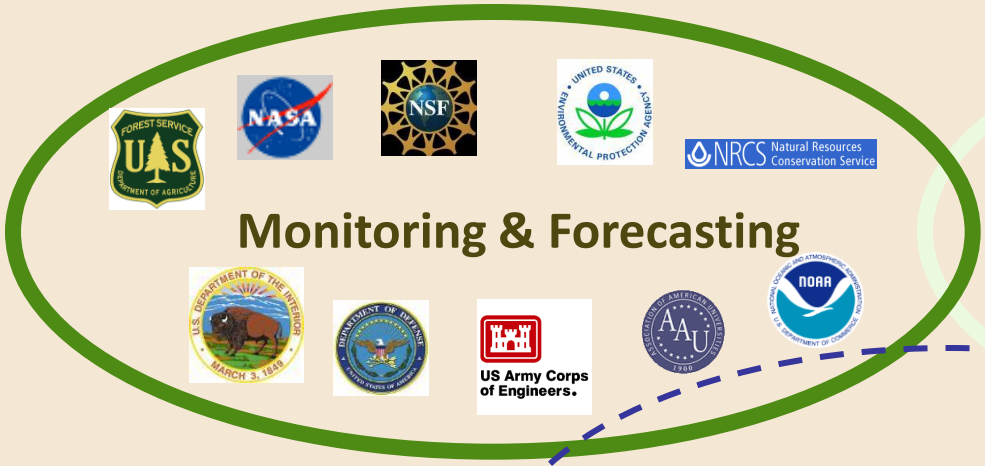
- **U.S. Climate Resilience Toolkit and Human Health:** toolkit.climate.gov/topics/human-health
- **Regional Integrated Sciences and Assessment (RISA):** bit.ly/CPORISA
- **Coastal and Ocean Climate Applications Program (COCA):** bit.ly/CPO-COCA

Crafting an integrated information system



To make the best decisions, stakeholders need access to more than just one piece of the puzzle. Integrated Information Systems are designed to evolve over time, offer opportunities for diverse participation, and integrate what we learn through practice.

NIDIS Partnerships (Federal, States, Tribes, Private)



Drought Early Warning

Information

Systems

Moving Beyond Impact Assessments (and Reports)

Integrated Climate, Ecosystems, Hydrology:Technical Info & Data

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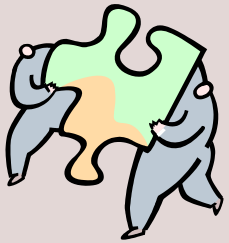

Watershed, state, tribal, local: Experience & Knowledge

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Decision Support

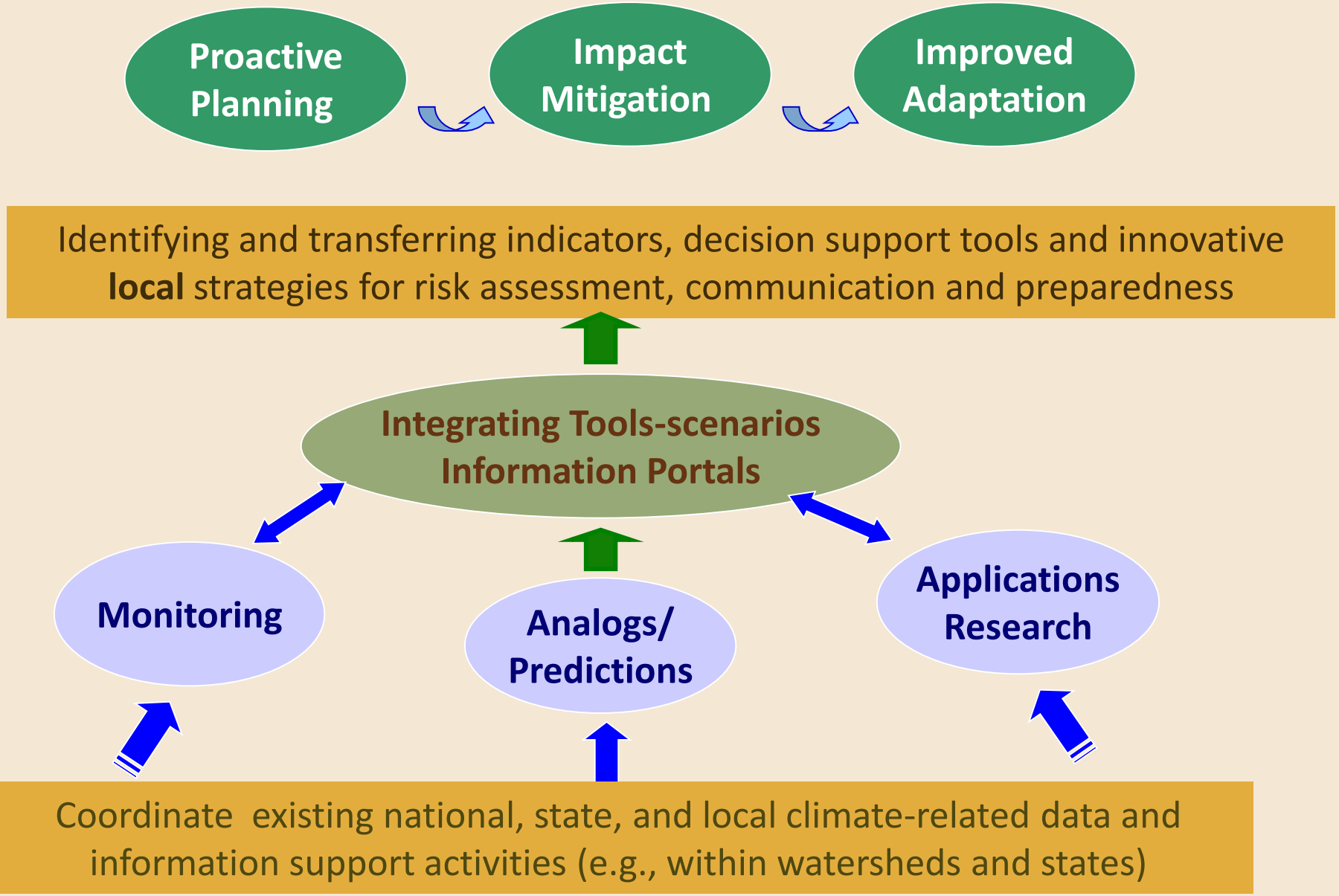
Climate information: Needs,usability,evaluation

Entry points for proactive Planning-triggers and indicators

Enabling adaptation:

Best available drought risk & water supply information Input to drought planning, preparedness and adaptation

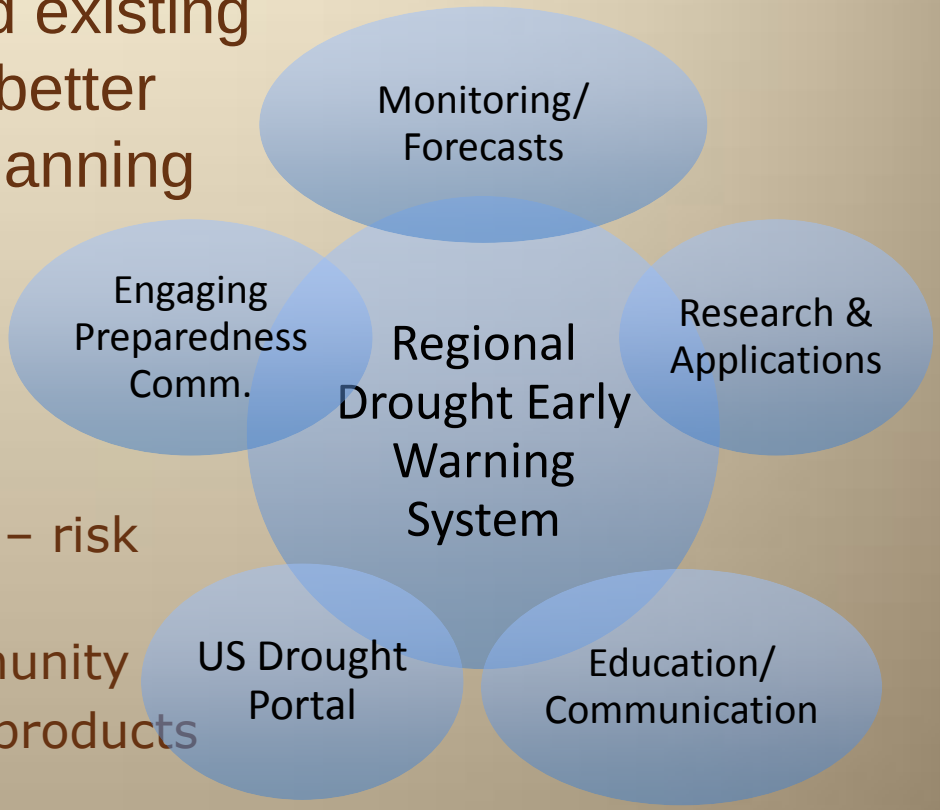
NIDIS REGIONAL INFORMATION MANAGEMENT MODEL



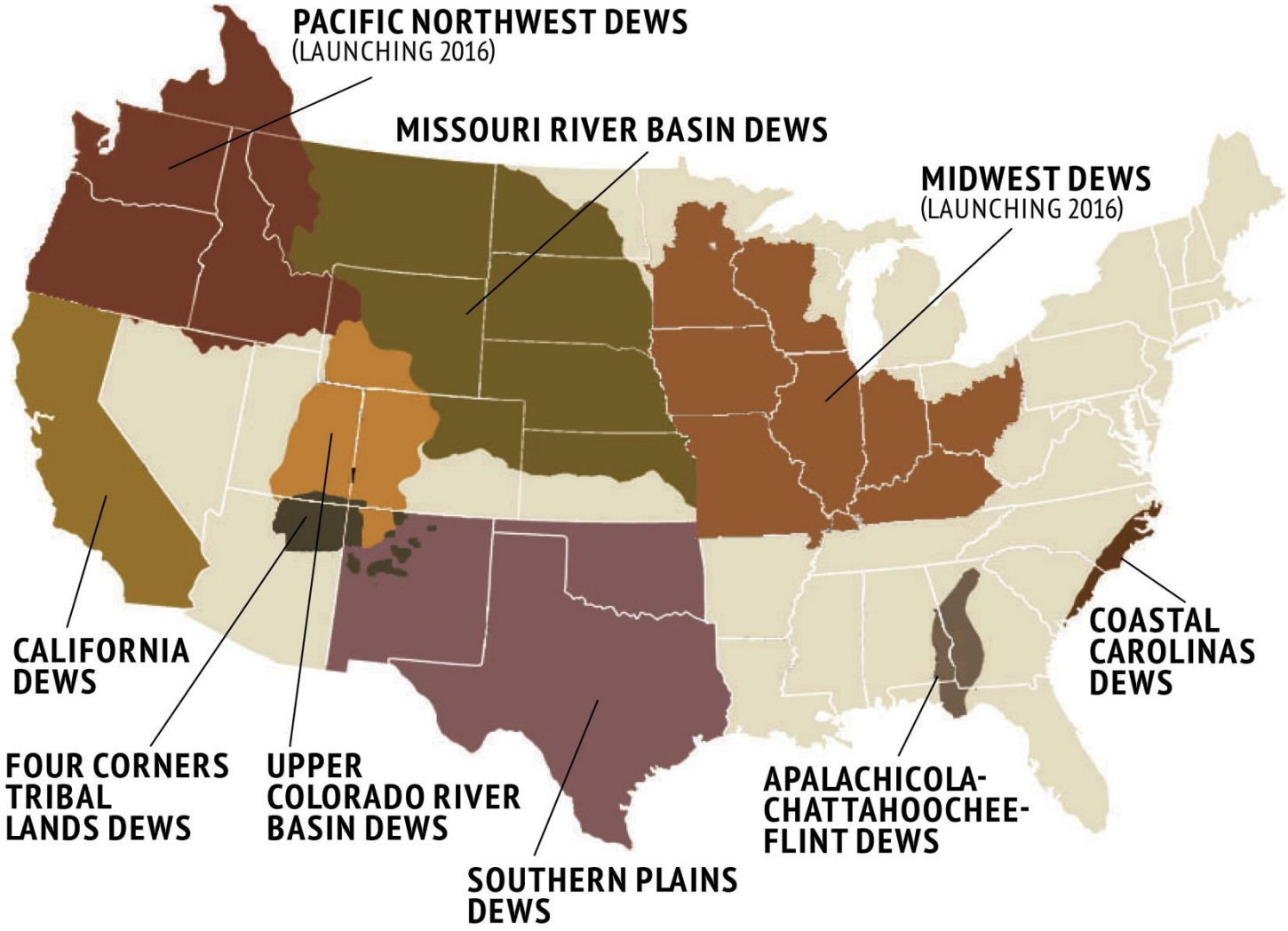
Regional Drought Early Warning Systems (DEWS)

Working with communities and existing networks to build capacity for better decision making for drought planning and mitigation.

- Drought assessments
- Climate outlook forums
- Education and outreach webinars – risk management
- Engaging the preparedness community
- Builds capacity to utilize existing products



NIDIS Drought Early Warning Systems



NIDIS Technical Working Groups

Regional Drought Early Warning Systems

NIDIS Implementation

Over 50 Federal, state, tribal and private sector representatives nationally

Integrated Monitoring and Forecasting

NRCS, USGS
River Forecast Center, BoR
Climate *Prediction* Center
USDA

Interdisciplinary
Needs Assess., Research, Applications

Regional Integrated Sciences and Assessments
Regional Climate Centers
NCAR

U.S. Drought Portal

NCDC
NDMC-NOAA,USGS, USDA, USBoR

Public Awareness And Education

State Climatologists, NWS-CSD
USDA Extension

Engaging Preparedness Communities

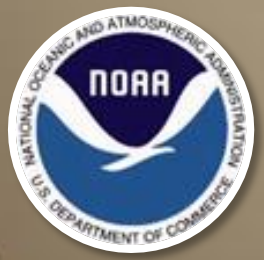
NDMC
State and Tribal Offices, RISAs
US BoR, USACE, Counties

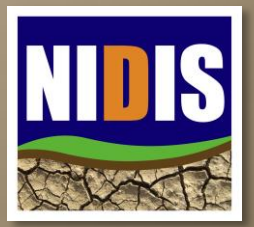
Examples of DEWS Activities

- **Upper Colorado River Basin**
  - Snowpack monitoring workshops in CO, UT and WY
  - Monthly/biweekly webinars
  - Capacity development on the Wind River Reservation to support drought planning decision support tools

- **Four Corners/Tribal Lands**
  - Effort to increase monitoring capacity using CoCoRaHS by USDA, NWS and Colorado Climate Center
  - University of Arizona (supported by NOAA SARP/NIDIS) is working with Hopi Dept. of Natural Resources to develop a drought status-monitoring program

- **California**
  - Drought/ENSO outlooks and outreach
  - Sub-regional focus on research and activities





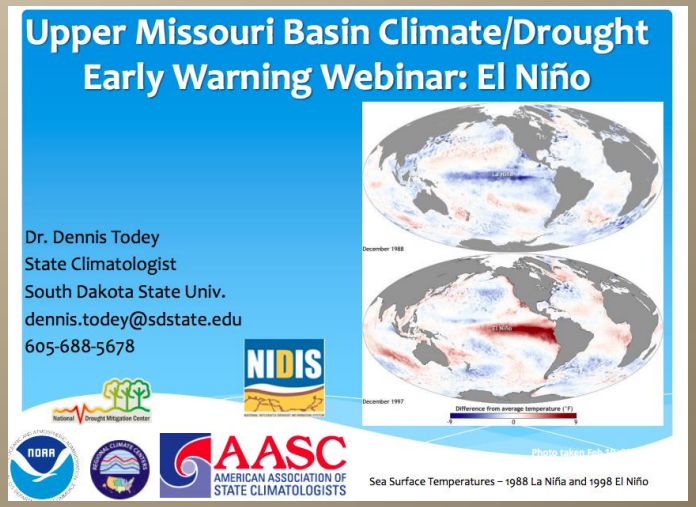
Examples of DEWS Activities

- **Southern Plains**
  - Texas and Oklahoma Inter-agency Climate Extremes Workshop
  - San Antonio Multi-Hazard Tournament

- **Apalachicola-Chattahoochi-Flint (ACF) Basin**
  - Series of sub-regional workshops and one basin-wide workshop
  - Monthly webinar series

- **Coastal Carolinas**
  - CoCoRaHS Citizen Science Conditions Monitoring project
  - Coastal Drought Index

- **Missouri River Basin**
  - Tribal capacity building for drought plans, vulnerability assessment, leveraging federal resources
  - Monthly webinar series



Year 1: Scoping the Drought Early Warning Information System	Year 2. Implementation of the Drought Early Warning System (seasonal, multi-year, longer term trends):
Gap analyses: What information exists and how is it being coordinated and used? Characterize and communicate risks across timescales-with existing information for 2-3 critical issues	**Develop drought sub-portals Embed information into preparedness and adaptation plans Establish network for ongoing briefings on impacts and projections across climate timescales**
Develop subteams to assess (1) Monitoring and forecasting; (2) Impact indicators and triggers (3) Preparedness and education: Assemble drought-sensitive planning indicators and management triggers database; Assess present drought information coordination partnerships and processes Identify Federal and state-level partnerships, decision support tools and actions needed (to improve information development, coordination and flow for preparedness and risk reduction) *Develop an operational plan for designing and implementing an EWS process*	**Initiate development of a region or basin specific Drought Information Monitor and Portal (as a subset of the U.S. Drought Portal)** Develop decision support tools for demand projections and revise triggering criteria Prototyping: **Given better data and information coordination would responses have been improved for past events? Assess (1) value of improved information using past conditions, (2) responses for projections/ scenarios (decadal, climate change), (3) feedback on priorities (e.g. data gaps) to Executive Council.** Feedback into regional Drought Monitor and Portal. Early Warning System maintenance (Fed-state-tribal) and transfer to other sub-basins

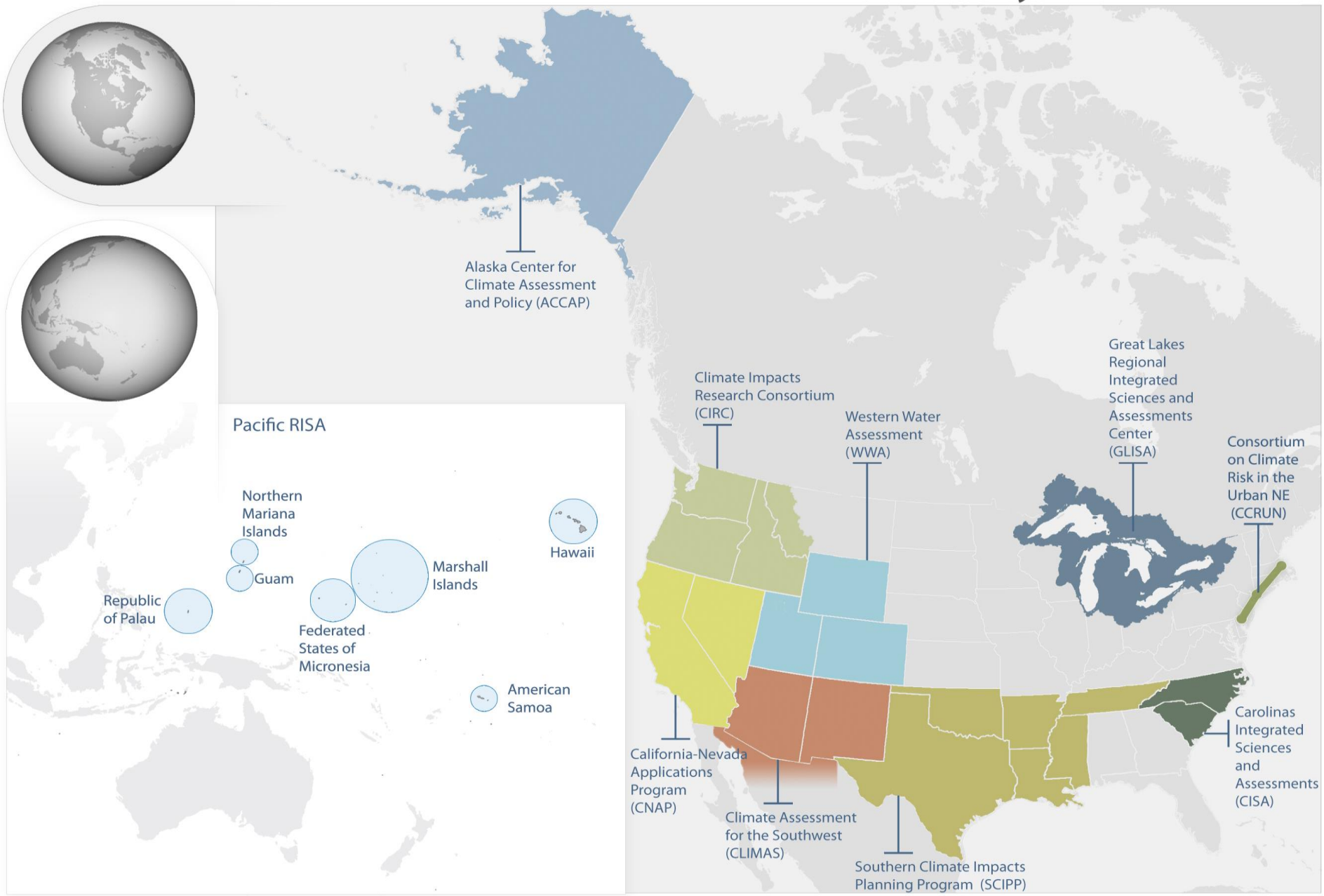
RISA

RISAs support research teams that help expand and build the nation's capacity to prepare for and adapt to climate variability and change. Central to the RISA approach are commitments to process, partnership, and trust building. RISA teams work with public and private user communities to:

- advance understanding of context and risk;
- support knowledge to action networks;
- innovate services, products and tools to enhance the use of science in decision making; and
- advance science policy

adviser, expert, specialist, authority

Currently Funded RISAs



Innovating and Developing Services

- Climate impacts training;
- Climate outlooks and outlook fora;
- Climate extension;
- Communication tools (visualization, white papers, report, etc.); and
- Decision support tools and information systems for drought, climate, water supply and availability, agriculture and other impacts.

NEW DROUGHT RESILIENCE PARTNERSHIP

FEMA

US Army Corps of Engineers

USDA

Nov 15, 2013 - As part of the President's Climate Action Plan, the Administration is launching a National Drought Resilience Partnership (the Partnership). The Partnership will make it easier for communities to access the drought assistance they need by promoting strong partnership and information sharing at all levels of government. It will also build on existing efforts to provide States, Tribes and local communities risk-informed decision making tools for drought preparedness planning. The Partnership aims to align Federal drought polices across the government and help communities manage the impact of drought by linking information (monitoring, forecasts, outlooks, and early warnings) with drought preparedness and long-term resilience strategies in critical sectors such as agriculture, municipal water systems, energy, recreation, tourism and transportation.

PRESS RELEASE **MORE INFORMATION**

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Questions?

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